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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,293	08/08/2001	Iwao Tahara	01470/LH	3121

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FRISHAUF, HOLTZ, GOODMAN & CHICK, PC  
767 THIRD AVENUE  
25TH FLOOR  
NEW YORK, NY 10017-2023

EXAMINER

TOLEDO, FERNANDO L

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/924,293

Applicant(s)

TAHARA ET AL.

Examiner

Fernando Toledo

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-21 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-21 and 23-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 6, 9 – 11, 13 – 19 and 23 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy (U. S. patent 6,180,976 B1) in view of Murayama et al. (U. S. patent 5,258,886).

In re claims 1, 13 and 14, Roy in the U. S. patent 6,180,976 B1; figures 1 – 17 and related text, preparing a semiconductor wafer substrate including several chip forming regions each having a circuit element-forming region and several connection pads (column 6, lines 20 – 52); forming an insulating film 26 on the circuit element-forming region of each of the chip forming regions; forming at least one thin film passive element (500) including at least one conductive layer (506) on the insulating film; forming several columnar electrode, which are provided for connection to external terminals(532, 534, 536 and 538), and which are each electrically connected to at least one of the several connection pads (Figure 13); dividing the semiconductor wafer substrate into individual chip forming regions so as to form several semiconductor devices each having at least on thin film passive element (column 6, lines 1 – 20); a sealing film 530 which is provided between the columnar electrodes and covers the at

least one thin film passive element, and from which an upper edge surface of each of the columnar electrode is exposed (Figure 13).

Roy does not teach wherein the dielectric is an organic dielectric.

However, Murayama in the U. S. patent 5,258,886; figures 1 – 10 and related text discloses organic dielectrics are suitable in thin film capacitors having minimum size and weight (Column 1, lines 14 – 27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the dielectric layer of Roy be an organic dielectric layer, since, as taught by Murayama, organic dielectrics are suitable in thin film capacitors having minimum size and weight.

3. In re claims 2 and 15, Roy discloses wherein the forming of the thin film passive element includes forming at least one capacitance element (see title of reference).

4. In re claims 3 and 16; Roy discloses wherein the forming of the capacitance element includes: forming a first conductive layer (404) on the circuit element-forming region of the semiconductor substrate with an insulating film interposed therebetween; forming a dielectric material layer (Figure 12) on the first conductive layer; forming a second conductive layer (402) on the dielectric layer.

5. In re claims 4 and 17; Roy discloses wherein the forming of the capacitance element includes: forming on the insulating film one conductive layer having at least two portions; and forming a dielectric material layer in the clearance between the at least two portions (Figure 12).

6. In re claims 5 and 18; Roy discloses wherein the forming of the capacitance element includes: forming on the insulating film one conductive layer having at least two portions; forming the columnar electrodes as plate-like electrodes respectively on the at least two portions; and forming a dielectric material layer in a clearance between surfaces of the plate-like electrodes (Figure 12);

7. In re claims 6 and 19; Roy discloses wherein the forming of the thin film passive elements includes forming at least one inductance element (column 12, lines 14 – 18).

8. In re claims 9 and 23; Roy teaches wherein the forming of the thin film passive elements includes forming at least two terminals, at least one of which is electrically connected to one of the columnar electrodes (Figure 12).

9. In re claims 10 and 24; Roy teaches wherein the forming of the thin film passive elements includes forming at least two terminals, at least one of which is electrically connected to one of the connection pads (Figure 12).

10. In re claims 11 and 25; Roy shows wherein the forming of the thin film passive elements includes forming at least two terminals, each of which is electrically connected to at least one of the connection pads and the columnar electrodes (Figure 12).

11. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy in view of Murayama as applied to claims 1 – 6, 9 – 11, 13 – 19 and 23 – 25 above, and further in view of Yamazaki, Toru (U. S. patent 6,002,161).

Roy discloses forming an inductor, however, Roy does not disclose wherein the forming of the inductance element includes patterning the conductive layer in any of the shapes selected from the group consisting of an angular eddy shape, a rectangular

waver shape and a loop shape; forming the connection pads to include at least one first connection pad that is not electrically connected to any of the columnar electrodes, and at least one second connection pad electrically connected to at least one of the columnar electrodes, and forming at least two terminals, at least one of which is connected to at least one of the first connection pad and the second connection pad.

However, Yamazaki in the U. S. patent 6,002,161; figures 1 – 15 teaches that the inductance of the inductor element varies depending upon outer dimensions, turn number and wiring width and wiring distance (column 1, lines 29 – 34); also, Yamazaki discloses forming the connection pads to include at least one first connection pad that is not electrically connected to any of the columnar electrodes, and at least one second connection pad electrically connected to at least one of the columnar electrodes, and forming at least two terminals, at least one of which is connected to at least one of the first connection pad and the second connection pad as conventional way to connect an inductor (Figure 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the inductance element of Roy by patterning the conductive layer in any of the shapes selected from the group consisting of an angular eddy shape, a rectangular waver shape and a loop shape and forming the connection pads to include at least one first connection pad that is not electrically connected to any of the columnar electrodes, and at least one second connection pad electrically connected to at least one of the columnar electrodes, and forming at least two terminals, at least one of which is connected to at least one of the first connection

Art Unit: 2823

pad and the second connection pad, since as taught by Yamazaki, the inductance of the inductor element varies depending upon outer dimensions, turn number and wiring width and wiring distance, and forming the connection pads to include at least one first connection pad that is not electrically connected to any of the columnar electrodes, and at least one second connection pad electrically connected to at least one of the columnar electrodes, and forming at least two terminals, at least one of which is connected to at least one of the first connection pad and the second connection pad as conventional way to connect an inductor.

12. Claims 8 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy and Murayama in view of Yamazaki as applied to claims 7 and 20 above, and further in view of Yamazaki et al. (U. S. patent 6,331,722 B1).

Roy and Murayama in view of Yamazaki do not show wherein the inductance element includes forming a magnetic film on the conductive layer.

However, Yamazaki et al. in the U. S. patent 6,331,722 B1 discloses that inductors can be formed by using magnetic material as it is well known in the art (column 2, lines 45 – 55).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the inductor of Roy in view of Yamazaki with a magnetic material since as taught by Yamazaki et al. it is well known in the art to form inductance elements with a magnetic material, also, it has been held to be within the general skill of a worker in the art to select a known material on the base of its suitability, for its intended use involves only ordinary skill in the art. *In re Leshin*, 125 USPQ 416.

***Response to Arguments***

13. Applicant's arguments with respect to claims 1 – 11, 13 – 21 and 23 – 25 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fernando Toledo whose telephone number is 703-305-0567. The examiner can normally be reached on Mon-Fri 8am to 4pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers




Art Unit: 2823

for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



George Fourson  
Primary Examiner  
Art Unit 2823



FT Toledo  
April 30, 2003